APPENDIX 7 — INDUSTRY DEVELOPMENTS RELATED TO THE GSES DURING AND AFTER THE PROPOSED CLASS PERIOD

A. In His Event Study, Dr. Hallman Fails to Consider Industry Developments Related to the GSEs During the Proposed Class Period.

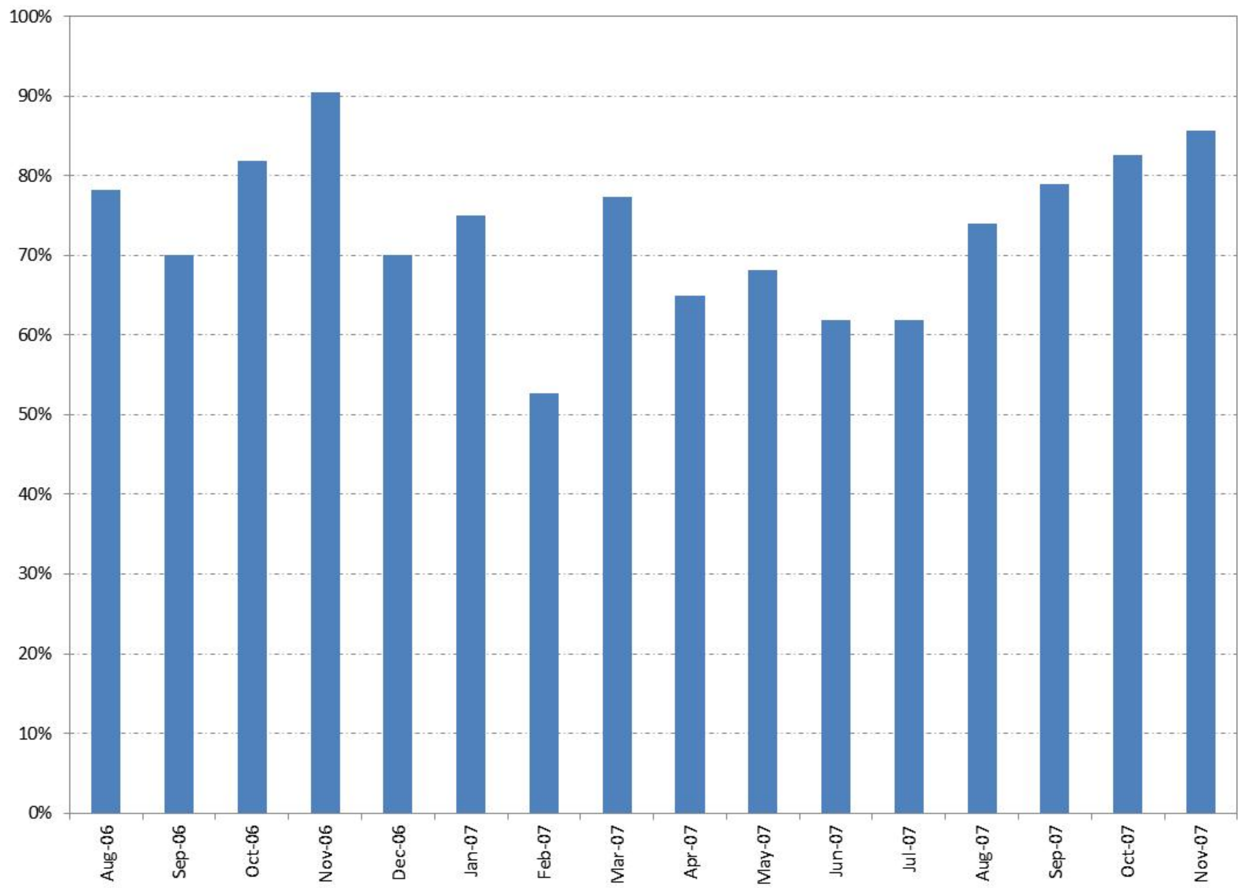
1. Dr. Hallman's event study uses the broad stock market index (the Standard & Poor's 500 index ["S&P 500 Index"]) as a proxy for the macroeconomic effects that could have affected Freddie Mac's stock price on a particular day. His model thus fails to consider industry effects, such as changes in the regulatory environment and developments in the housing and mortgage markets that could affect the two GSEs' financial condition much more than that of other companies included in the S&P 500 Index. For example, even before the start of the Proposed Class Period, Credit Suisse analysts noted that the primary risks to their price targets for the GSEs included Congress limiting sizes of their Retained portfolios, and a severe downturn in the housing market.[1]

2. Due to the impact of such industry specific factors, the abnormal returns of the stocks of Freddie Mac and Fannie Mae moved in same direction on most (242) of the 330 trading days during the Proposed Class Period. If there was no co-movement between the two GSE stocks' abnormal returns, one would expect to see them moving together on about 50% of the trading days in the Proposed Class Period. However, a statistical test confirms that the proportion of days in the Proposed Class Period when the GSE stocks' abnormal returns co-moved (73.33% = 242/ 330) is significantly greater than 50%.

3. Figure 1 displays the fraction of days on which the GSE stocks' abnormal returns moved in the same direction by month (as a percentage of all trading days in the month) from August 1, 2006 through November 20, 2007.

[1] Orenbuch, Moshe *et al.*, "Freddie Mac - Business Activity Jumps; Portfolio Declines," *Credit Suisse*, July 24, 2006; Orenbuch, Moshe et al., "Fannie Mae- Business Volumes Pick Up; Retained Portfolio Shrinks," *Credit Suisse*, July 28, 2006.

Figure 1 – Monthly Percentage of Days on which the Abnormal Returns of GSE Stocks Moved in the Same Direction throughout the Proposed Class Period[2]



4. The GSEs were subject to a host of regulatory constraints that evolved over time with their regulator's views of the GSEs' risks. For instance, in light of their operational risks (which Freddie Mac had disclosed before and throughout the Proposed Class Period), OFHEO required the GSEs to increase their capital adequacy thresholds by 30% and

[2] I calculate Freddie Mac stock's abnormal returns using Dr. Hallman's event study model. I calculate Fannie Mae stock's abnormal returns in a similar way, *i.e.*, using the same estimation period and the same market index that Dr. Hallman used to calculate Freddie Mac stock's abnormal returns.

restricted their Retained portfolio growth.[3] The GSEs were also subject to other regulatory constraints, including limits on the size of loans they were permitted to purchase, and "stricter standards on down payments and verification of income than were imposed by Wall Street during the housing boom."[4]

5. Given their federal charters, the GSEs were perceived to have a funding cost advantage relative to non-agency institutions.[5] Thus, analysts opined that, if permitted by OFHEO to expand their Retained portfolio, the GSEs could benefit from the housing turmoil by capitalizing on investors' diminished demand for non-agency mortgage-backed securities.[6]

6. As I discussed in my report, on Thursday, August 9, 2007, a global credit crisis suddenly erupted. Given reduced secondary mortgage market liquidity at the time,[7] analysts expected that the GSEs would be "important sources of liquidity as the mortgage markets pass through the current difficult environment."[8] Consequently, analysts viewed the crisis as aligning "the company's charter with their respective shareholders: namely to

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3 "Text - US OFHEO Raises Freddie Mac Mandatory Cap Target by 30%," *Market News International*, January 29, 2004; Kopecki, Dawn, "DJ Fannie To Maintain 30% Capital Surplus," *Dow Jones Chinese Financial Wire*, September 27, 2004, 10:21.

Fannie Mae "agreed to limit the growth of its multibillion-dollar mortgage holdings, capping them at $727 billion" on May 23, 2006. [Gordan, Marcy, "Report: Fannie Mae Manipulated Accounting," *Associated press Newswires*, May 23, 2006.] The portfolio cap for Freddie Mac was agreed upon on August 1, 2006, when it "complied with a request by federal regulators to limit the size of its portfolio in a bid to temporarily install greater financial controls." ["Freddie Mac limits portfolio growth," *Associated press Newswire*, August 1, 2006.]

4 Hagerty, James R, "Big Fans for Fannie, Freddie --- Some Lawmakers See One-Time Pariah Firms As Subprime Salvation," *The Wall Street Journal*, August 8, 2007.

5 Fannie Mae 2007 Annual Report, page 11.

6 Hagerty, James R, "Big Fans for Fannie, Freddie --- Some Lawmakers See One-Time Pariah Firms As Subprime Salvation," *The Wall Street Journal*, August 8, 2007.

7 Haviv, Julie, "ANALYSIS-Agency MBS succumbs to global credit squeeze," *Reuters News*, August 21, 2007.

8 Hochstim, David and Michael Nannizzi, "OFHEO Keeps Portfolio Caps in Place," *Bear Stearns*, August 13, 2007.

support the secondary markets as well as provide attractive returns to shareholders by buying attractively valued assets for which the current market has a reduced appetite."[9]

7. At the time, it was unclear as to whether OFHEO would relax the limits on the GSEs' Retained portfolios and thereby allow the GSEs to provide needed stability to the secondary mortgage market. Throughout August 2007, it was widely discussed as to whether OFHEO would relax limits on the sizes of the two GSEs Retained portfolios.[10]

8. Press reports on August 30, 2007, noted the Federal Reserve Chairman Ben Bernanke's comments made on the previous day (made towards close of the stock market[11]) that OFHEO should not relax portfolio limits on Fannie Mae and Freddie Mac.[12] On August 30, 2007, a Bear Stearns analyst report stated that "[t]he company remains well positioned to benefit from the current turmoil in the mortgage market, but remains somewhat constrained in its ability to provide badly needed liquidity to the non-agency segment of the market as a result of the 'temporary' portfolio growth caps that were imposed by OFHEO."[13] Hence, analysts considered discussions by members of Congress and regulators concerning OFHEO's limit on the GSEs' Retained portfolio size as value-relevant information during the Proposed Class Period.

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9 Hochstim, David and Michael Nannizzi, "OFHEO Keeps Portfolio Caps in Place," *Bear Stearns*, August 13, 2007.

10 See, *e.g.*, Ives-Halperin, Benton and James R. Hagerty, "HUD: Talking To OFHEO About Raising GSE Mortgage Buying Limit," *Dow Jones International News*, August 8, 2007; Hilzenrath, David S., "Higher Caps Urged For Fannie, Freddie; Democrats Seek Bigger Role for Firms," *The Washington post*, August 18, 2007.

11 Tyson, James, "Bernanke Says Fannie, Freddie Asset Caps 'Need Not Be Lifted,'" *Bloomberg News*, August 29 2007, 15:03:07.

12 Hilzenrath, David S., "Bernanke Opposes Lift Of Fannie, Freddie Caps," *The Washington post*, August 30, 2007; Tyson, James, "Bernanke Says Fannie, Freddie Asset Caps 'Need Not Be Lifted'," *Bloomberg News*, Aug 29 2007, 3:03:07 P.M. EDT.

13 Hochstim, David and Michael Nannizzi, "Freddie Mac: Solid Q2 Results; Credit Risk Still Low Despite GAAP Distortions," *Bear Stearns*, August 30, 2007.

9. Such discussion regarding changes in the GSEs' Retained portfolio limits continued through September 2007.[14] On September 19, 2007, OFHEO ultimately did "marginally" increase its portfolio cap for both companies to $735 billion, effective July 1, 2007.[15]

10. In addition to the effects of regulatory actions, Dr. Hallman has also failed to consider the impact of growing mortgage defaults due to the widespread and surprising deterioration in the U.S. housing market. Together with Fannie Mae, Freddie Mac was required by its charter to offer liquidity to the secondary mortgage market and was not permitted to diversify its operations by entering other markets.[16] Consequently, the GSEs' financial conditions and earnings depended "almost entirely" on conditions in a single sector of the U.S. economy, *i.e.*, the housing sector. [17]

11. Housing markets had begun to show signs of weakening in 2006. In November 2006, OFHEO noted that housing prices in the U.S. declined for the first time in 13 years.[18] The deterioration in housing markets continued and accelerated through the third quarter of 2007. For example, on August 19, 2007, an *American Banker* article commented on the likely impact of declining house prices on the GSEs as follows:[19]

> Over the last few months almost 300 mortgage companies have failed, and the carnage is far from over.

[14] See, *e.g.*, "Schumer Says Treasury Might Allow Fannie and Freddie to Exceed Limits," *The Washington post*, September 1, 2007; Thornberg, Christopher, "FANNIE AND FREDDIE: CAN THEY COME TO THE RESCUE?," *The Los Angeles Times*, September 2, 2007; Paletta, Damian, "UPDATE: Tsy Approached GSEs About New Products For Mkt Issues," *Dow Jones Capital Markets Report*, September 5, 2007; Haviv, Julie, "ANALYSIS-Key buyers to stay away from US mortgage market," *Reuters News*, September 6, 2007; Zibel, Alan, "Schumer proposes temporary lift of Fannie Mae, Freddie Mac limits to deal with mortgage woes," *Associated press Newswires*, September 10, 2007, 17:34 P.M. EST; Reed, Danielle and Agnes T. Crane "Agency Mortgage Bond Market Craves More Than A 25BP Rate Cut," *Dow Jones Newswires*, September 17, 2007.

[15] Paletta, Damian, "5th UPDATE: Ofheo To Let Fannie Grow Portfolio 2% Annually," *Dow Jones Capital Markets Report*, September 19, 2007, 15:54.

[16] Fannie Mae 2006 Annual Report, page 27.

[17] Fannie Mae 2006 Annual Report, page 27.

[18] Al Yoon, "UPDATE 2-Fannie, Freddie loan limit unchanged as prices fall," *Reuters News*, November 28, 2006, 09:28 A.M. EDT.

[19] Berger, Carole, "Viewpoint: Fannie and Freddie Are Fine - OFHEO Is Not," *American Banker*, August 19, 2007. [Emphasis added]

> Only conventional mortgages, for which the GSEs have had the sole role of crafting underwriting standards, seem to be holding up. Perhaps Congress should think about expanding the GSEs' lending limits and product scope. Undoubtedly, losses on conventional mortgages are likely to rise as well, because having so many houses go into default brings down the value of whole neighborhoods. **As home prices fall, even sensible, well-meaning homeowners, who could not have foreseen such circumstances, are likely to be affected**.

12. On August 22, 2007, a Goldman Sachs report noted that there may be "significantly larger nominal home price declines than previously seemed likely."[20]

13. On August 30, 2007 (one of Dr. Hallman's 6 Analyzed Dates), *Bloomberg News* reported that "U.S. house prices in the second quarter rose at the slowest pace in a decade"[21] and both Freddie Mac and Fannie Mae stocks' prices declined by 5.03% and 3.59%, respectively.

14. The outlook for housing markets continued to worsen over the remainder of the Proposed Class Period. By September 30, 2007, OFHEO's House Price Index ("HPI") recorded its first quarterly decline (of 0.4%) nationwide in nearly thirteen years.[22] Deteriorations in the U.S. housing market caused disruptions in the mortgage market. For example, a Zacks analyst noted on September 26, 2007 that "[t]he wave of mortgage resets is still building, and this will cause more foreclosures, dumping more supply [of foreclosed houses] on the market."[23] On October 6, 2007, *The Economist* noted that:[24]

> [The] news from America's housing market is getting no better. This week's helping of woe was a further sharp drop in pending

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20 "US Daily Financial Market Comment," *Goldman Sachs Economic Research*, August 22, 2007.

21 Howley, Kathleen M., "U.S. Home Prices Gain at Slowest Pace in a Decade (Update5)," *Bloomberg News*, Aug 30, 2007.

22 OFHEO News Release, "House Prices Weaken Further In Most Recent Quarter," *Office of Federal Housing Enterprise Oversight*, November 29, 2007.

23 "Zacks Analyst Blog Highlights: Fannie Mae, Freddie Mac, Lennar, Beazer and D.R. Horton," *Business Wire*, September 26, 2007.

24 "Don't free Fannie and Freddie - America's housing giants," *The Economist*, October 6, 2007.

> home sales, an indicator of where the market is heading next. As sales plummet and defaults and foreclosures climb, pessimists fear that over a million Americans could be turfed out of their homes as adjustable-rate mortgages are reset.

15. In November 2007, analyst commentary continued to reflect "[expected] lower home prices [that would] cause continued turmoil in the credit markets."[25] As analyst Howard Shapiro of Fox-Pitt, Kelton noted on November 13, 2007, such a continued precipitous decline in the housing market, and the related mortgage-backed securities market, was causing panic.[26] Other analysts described the decline in the GSEs' stock prices in November 2007 as "fear-driven weakness."[27]

16. On November 20, 2007 (one of Dr. Hallman's 6 Analyzed dates), Freddie Mac and Fannie Mae stocks' prices declined by 28.69% and 24.83%, respectively. That day, a Goldman Sachs report noted: "housing prices are likely to fall a lot further, write-downs will mount and some mortgage insurers and guarantors will be forced to raise capital just to survive."[28] On the same day, the GSEs' funding cost (*i.e.*, the yield it offered on its debt securities relative to U.S. Treasury bonds) rose to its highest level "in a decade." [29] Although, this increase in funding cost was not related to Freddie Mac's announcement that day,[30] it would have had an expected adverse impact on Freddie Mac's financial condition and stock price, assuming *arguendo* that the stock traded in an efficient market.

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25 "Lehman downgrades Fannie Mae and Freddie Mac on poor credit outlook," *Associated press Newswires*, November 12, 2007.

26 "The Glass is Half Full," *Fox-Pitt, Kelton*, November 13, 2007. [Emphasis added]

27 Sacco, George A. Jr and Marco E Villegas, "Fannie Mae — Credit Losses Likely to Rise, but Concerns Over Wamu Loans And MIs Seem Overdone – Corrected Note supersedes any previous versions," *J.P. Morgan*, November 8, 2007; and Sacco, George A. Jr and Marco E Villegas, "Freddie Mac — Higher Credit Expenses and GA Loss Likely in 3Q, but Derivative Losses Likely Smaller than Fannie's," *J.P. Morgan*, November 19, 2007.

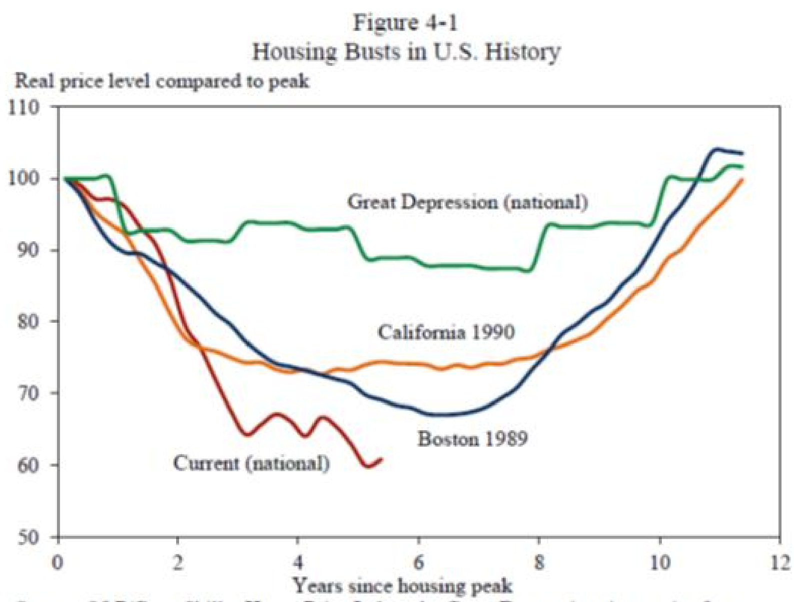
28 "Goldman paints bleak picture for housing, financials," *Reuters News*, November 20, 2007.

29 Haviv, Julie, "UPDATE 2-MORTGAGES/AGENCIES-Agency 2-yr sector at 10-yr wide," *Reuters News*, November 20, 2007.

30 Haviv, Julie, "UPDATE 2-MORTGAGES/AGENCIES-Agency 2-yr sector at 10-yr wide," *Reuters News*, November 20, 2007.

17. It is widely recognized that this unforeseeable housing crisis was of unprecedented proportions and continued to worsen in the post-Class Period. During the recent financial crisis, U.S. house prices declined nationwide for only the second time since World War I.[31] The recent decline, however, is acknowledged to be far worse than the one that occurred during the Great Depression, as Figure 4.1 shows.

Figure 4.1 2012 Economic Report of the President: Housing Busts in U.S. History



Source: S&P/Case-Shiller Home Price Index; the Great Depression time series from Shiller (2005).

18. In real (or inflation-adjusted) terms, the 2012 President's Report noted that the recent nationwide home price decline (from 2007-2012) was four times as large as that during the Great Depression (1925-1930).[32] By September 2008, when Freddie Mac was taken into conservatorship, the inflation adjusted Case-Shiller U.S. home price index had declined 32% from its peak in the first quarter of 2006.[33]

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31 2012 Economic Report of the president ("2012 President's Report"), page 101.

32 2012 President's Report, page 101.

33 Data from Robert J. Shiller, *Irrational Exuberance*, 2nd. Edition, Princeton University press, 2005, 2009, Broadway Books 2006, also Subprime Solution, 2008, as updated by author and obtained from author's website http://www.econ.yale.edu/~shiller/data.htm accessed December 9, 2012.

19. The severe home price declines that occurred in 2008 were not anticipated by market participants. During that year, the home prices declined by 9.6%. Based on a survey of over 50 economists by *The Wall Street Journal*, as of October 2007, the median forecast for year 2008 forecasted a decline of only 2.6% in home prices during that year. Though the global financial crisis intensified in 2008, forecasters did not properly anticipate the depth of U.S. home price declines. As late as October of 2008, the median forecast for home price decline during 2008 was only 6%.[34]

20. As prominent investor Warren Buffett noted in a 2010 interview, neither he nor anyone else saw the crisis coming: "... they [Moody's] didn't see it coming, I didn't see it coming, you know, the media didn't see it coming, Congress didn't see it coming."[35]

21. As I noted in my report, given the unprecedented events in the financial markets that had taken place, on July 15, 2008, the SEC publicly announced that "the normal price discovery process," which is the hallmark of an efficient market had not been functioning properly for the GSEs' stocks and that of several other major financial companies, and it banned "naked" short selling[36] of their stocks.[37] Again, on September 19, 2008, the SEC, acting in concert with the U.K. Financial Services Authority, "took temporary emergency action to prohibit short selling in [799] financial companies to protect the integrity and quality of the securities market and strengthen investor confidence" as such unprecedented market turmoil continued.[38]

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[34] All data in this paragraph are obtained from *The Wall Street Journal*, which surveys a group of 51 economists throughout the year regarding their opinions on major economic indicators including gross domestic product ("GDP"), unemployment rates, and residential home prices. [http://online.wsj.com/public/page/economic-forecasting.html] The realized home price decline that *The Wall Street Journal* reports is based on HPI.

[35] FOX Business Network's Liz Claman interviews Warren Buffett, June 2, 2010. [http://everythingwarrenbuffett.blogspot.com/2010/06/fox-business-fox-business-networks-liz.html, accessed on December 7, 2012].

[36] "Naked short sale" of a security means "selling short [that security] without having borrowed the security[y] to make delivery." [SEC Division of Market Regulation: Responses to Frequently Asked Questions Concerning Regulation SHO available at http://www.sec.gov/divisions/marketreg/mrfaqregsho1204.htm].

[37] Securities and Exchange Commission, "Emergency Order Pursuant To Section 12(K)(2) Of The Securities Exchange Act Of 1934 Taking Temporary Action To Respond To Market Developments," Securities Exchange Act Of 1934 Release No. 58166, July 15, 2008; henceforth "SEC July 15 2008 Order."

[38] Securities and Exchange Commission, "SEC Halts Short Selling of Financial Stocks to Protect Investors and Markets," September 19, 2008.

22. In short, the market for Freddie Mac's common stock faced unprecedented turmoil during the Class Period. This salient and undeniable fact makes it especially critical to control for industry effects and volatility when evaluating the efficiency of the market in which Freddie Mac stock traded during that period, which Dr. Hallman has not done.